

IN THE CLAIMS

1. (Previously presented) A brazing sheet product comprising a core sheet, on at least one side of said core sheet a clad layer of an aluminum alloy comprising silicon in an amount in the range of 4 to 14% by weight, and further comprising on at least one outersurface of said clad layer a layer of nickel-tin alloy, such that the clad layer and all layers exterior thereto form a metal filler for a brazing operation and having a composition with the proviso that the mol-ratio of Ni:Sn is in the range of 10:(0.5 to 9).
2. (Previously presented) A brazing sheet product according to claim 1, wherein the mol-ratio of Ni:Sn is in the range of 10:(0.5 to 6).
3. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy is a plated layer.
4. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy is applied via a technique selected from the group consisting of dipping, thermal spraying, chemical vapor deposition, physical vapor deposition.
5. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy is essentially lead-free.
6. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy has a thickness of at most 2.0 μ m.
7. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy has a thickness of at most 1.0 μ m.
8. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy has a thickness in a range of 0.1 to 0.8 μ m.

9. (Previously presented) A brazing sheet product according to claim 1, wherein the layer of nickel-tin alloy has a thickness in a range of 0.25 to 0.8 μ m.
10. (Previously presented) A brazing sheet product according to claim 1, wherein there is provided a layer comprising zinc as a bonding layer between the outersurface of the AlSi-alloy clad layer and the nickel-tin alloy layer.
11. (Previously presented) A brazing sheet product according to claim 10, wherein the bonding layer has a thickness of at most 0.5 μ m.
12. (Previously presented) A brazing sheet product according to claim 10, wherein the bonding layer has a thickness of at most 0.3 μ m.
13. (Previously presented) A brazing sheet product according to claim 10, wherein the bonding layer has a thickness of in a range of 0.01 to 0.15 μ m.
14. (Previously presented) A brazing sheet product according to claim 1, wherein the core sheet is made of an aluminum alloy.
15. (Previously presented) A brazing sheet product according to claim 1, wherein the core sheet is made of an aluminum alloy selected from the group consisting of AA3xxx, AA5xxx and AA6xxx-series aluminum alloys.
16. (Previously presented) A brazing sheet product according to claim 1, wherein the brazing sheet product has a post-braze corrosion life of 6 days or more in a SWAAT-test without perforations in accordance with ASTM G-85.
17. (Currently amended) A method of manufacturing a product ~~an Al or Al alloy workpiece~~, which method comprises the steps of:
 - (a) providing an Al or Al alloy workpiece,
 - (b) pre-treating of the outersurface of the Al or Al alloy workpiece, and

(c) plating a metal layer comprising nickel onto said outersurface of the Al or Al alloy workpiece, wherein during step (c) said metal layer comprising nickel is deposited by plating a nickel-tin alloy using an aqueous plating bath comprising a nickel-ion concentration in a range of 2 to 50 g/l and a tin-ion concentration in the range of 0.2 to 20 g/l.

18. (Previously presented) A method according to claim 17, wherein during step (c) the electroplated layer has a composition such that the mol-ratio of Ni:Sn is in the range of 10:(0.5 to 9).

19. (Previously presented) A method according to claim 17, wherein during step (c) the electroplated layer has a composition such that the mol-ratio of Ni:Sn is in the range of 10:(0.5 to 6).

20. (Currently amended) A method according to claim 17, wherein taken together said aluminum base substrate and all layers exterior thereto form a metal filler for a brazing operation and having a composition comprising at least, by weight percent:

Si in the range of 5 to ~~12~~ 14 %,

Ni in the range of 0.03 to 8%,

Bi in the range of at most 0.3%,

Sb in the range of at most 0.3%,

Sn in the range of 0.01 to 7%,

Zn in the range of at most 0.3%,

Mg in the range of at most 5%,

balance aluminum and inevitable impurities,

with the proviso that the mol-ratio of Ni:Sn is in the range of 10:(0.5 to 9).

21. (Previously presented) A method according to claim 17, wherein the aqueous plating bath has a pH in the range of 6.5 to 9.0.

22. (Previously presented) A method according to claim 17, wherein the aqueous plating bath has

a pH in the range of 7.5 to 8.5.

23. (Previously presented) A method according to claim 17, wherein the aqueous plating bath further comprises a pyrophosphate as a complexing agent in a range of 0.2 to 2 M/l.
24. (Previously presented) A method according to claim 17, wherein the aqueous plating bath further comprises a further complexing agent in the form of an α -amino acid.
25. (Previously presented) A method according to claim 17, wherein the aqueous plating bath further comprises a further complexing agent in the form of an α -amino acid in the form of amino acetic acid.
26. (Previously presented) A method according to claim 17, wherein the layer of nickel-tin alloy has a thickness of at most 2.0 μ m.
27. (Previously presented) A method according to claim 17, wherein the layer of nickel-tin alloy has a thickness of at most 1.0 μ m.
28. (Previously presented) A method according to claim 17, wherein the layer of nickel-tin alloy has a thickness in a range of 0.1 to 0.8 μ m.
29. (Previously presented) A method according to claim 17, wherein the layer of nickel-tin alloy has a thickness in a range of 0.25 to 0.8 μ m.
30. (Currently amended) A method according to claim 17, wherein the product workpiece is a brazing sheet ~~product~~ comprising a core sheet coupled on at least one surface of said core sheet to an aluminum clad layer, the aluminum clad layer being made of an aluminum alloy comprising silicon in an amount in the range of 4 to 14% by weight, and wherein during step (b) at least the outersurface of the aluminum clad alloy is being pre-treated.
31. (Previously presented) A method according to claim 30, wherein the core sheet of the brazing

sheet is made of an aluminum alloy.

32. (Previously presented) A method according to claim 31, wherein the core sheet of the brazing sheet is made of an aluminum alloy selected from the group consisting of AA3xxx, AA5xxx, and AA6xxx-series aluminum alloys.
33. (Previously presented) Method of use of an aqueous plating bath for manufacturing Ni-plated products for use in a fluxless CAB brazing operation comprising:
 - electrodepositing a layer of nickel-tin alloy on an Al or Al alloy workpiece within the aqueous bath, the aqueous bath having a pH in the range of 6.5 to 9.0, and comprising
 - (i) Ni ions in the range of 2 to 50 g/l.,
 - (ii) Sn ions in the range of 0.2 to 20 g/l,
 - (iii) at least one member of the group consisting of sodium pyrophosphate and potassium pyrophosphate thereof in the range of 0.2 to 2 M/l as a complexing agent,
 - (iv) a further complexing agent, and a balance of water.
34. (Previously presented) Method of use according to claim 33, wherein the aqueous bath having a pH in the range of 7.5 to 8.5.
35. (Previously presented) Method of use according to claim 33, wherein the pyrophosphate is present in a range of 65 to 650 g/l.
36. (Previously presented) Method of use according to claim 33, wherein the pyrophosphate is present in a range of 100 to 350 g/l.
37. (Previously presented) Method of use according to claim 33, wherein the further complexing agent is in the form of an α -amino acid.
38. (Previously presented) Method of use according to claim 33, wherein the further complexing agent is in the form of an α -amino acid and wherein the α -amino acid is amino acetic acid.

39. (Previously presented) Method of use according to claim 33, wherein the further complexing agent is present in a range of 4 to 50 g/l.
40. (Previously presented) Method of use according to claim 33, wherein the further complexing agent is present in a range of 5 to 40 g/l.
41. (Previously presented) Method of use according to claim 33, wherein the aqueous plating bath is substantially free of lead ions.
42. (Previously presented) An assembly of components joined by brazing, and wherein at least one said components being a brazing sheet product according to claim 1.
43. (Currently amended) An assembly of components joined by brazing, and wherein at least one of said components being the product obtained by the method according to claim 17.
44. (Previously presented) An assembly according to claim 42, wherein the components are joined by means of a brazing operation in an inert atmosphere in the absence of a brazing flux material.
45. (Previously presented) An assembly according to claim 42, wherein the components are joined by means of a brazing operation using a vacuum.
46. (Previously presented) An assembly according to claim 42, wherein the parts made from said brazing sheet product have a post-braze corrosion life of 6 days or more in a SWAAT-test without perforations in accordance with ASTM G-85.
47. (Previously presented) An assembly according to claim 42, wherein at least one other of said components comprises a material selected from the group consisting of steel, aluminized steel, stainless steel, plated or coated steel, plated or coated stainless steel, bronze, brass, nickel, nickel alloy, titanium, and plated or coated titanium.

48. (Previously presented) An assembly according to claim 42, wherein the assembly is a heat exchanger for automotive application.
49. (Previously presented) An assembly according to claim 42, wherein the assembly is a fuel cell.
50. (Previously presented) An assembly according to claim 42, wherein the assembly is an electrochemical fuel cell.
51. (Previously presented) An assembly according to claim 43, wherein the components are joined by means of a brazing operation in an inert atmosphere in the absence of a brazing flux material.
52. (Previously presented) An assembly according to claim 43, wherein the components are joined by means of a brazing operation using a vacuum.
53. (Previously presented) An assembly according to claim 43, wherein the parts made from said brazing sheet product have a post-braze corrosion life of 6 days or more in a SWAAT-test without perforations in accordance with ASTM G-85.
54. (Previously presented) An assembly according to claim 43, wherein at least one other of said components comprises a material selected from the group consisting of steel, aluminized steel, stainless steel, plated or coated steel, plated or coated stainless steel, bronze, brass, nickel, nickel alloy, titanium, and plated or coated titanium.
55. (Previously presented) An assembly according to claim 43, wherein the assembly is a heat exchanger for automotive application.
56. (Previously presented) An assembly according to claim 43, wherein the assembly is a fuel cell.
57. (Previously presented) An assembly according to claim 43, wherein the assembly is an electrochemical fuel cell.

58. (Previously presented) A method according to claim 17, wherein the pyrophosphate is selected from at least one member of the group consisting of sodium pyrophosphate and potassium pyrophosphate.
59. (New) An assembly according to claim 43, wherein the nickel-tin alloy metal layer of the product being joined by brazing has a liquidus above 450°C and below the solidus of the Al or Al alloy workpiece.
60. (New) An assembly according to claim 43, wherein the nickel-tin alloy metal layer of the product being joined by brazing has a thickness of at most 2.0µm.